COMPARISON OF PROTOTYPE AND ROTE INSTRUCTION OF ENGLISH NAMES FOR CHINESE VISUAL CHARACTERS

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This study compared prototype and rote instruction of English names for Chinese visual characters. In the prototype condition, participants were taught the meaning of the prototype that served as the distinctive feature of multicomponent characters. In the rote condition, participants traced the character and wrote its translation. Participants learned more rapidly and maintained more words in the prototype condition.
DESCRIPTORS: Chinese, language training, adults, verbal behavior

The vast majority of the several hundred thousand Chinese characters are composed of multiple stimulus components. One component, a prototype, designates a concept, and additional components denote semantically related variations of the concept. There are 189 prototypes in the Chinese language. Matsuda and Robbins (1977) compared three conditions to teach receptive labeling of Chinese characters to American college students. For the exemplar-specific group, multiple-component Chinese characters were stimuli, and specific English word translations were responses. For the exemplar-category group, the same Chinese characters were stimuli, but responses were English equivalents of the concepts, not words. The prototype group was trained on only single-component prototypes as stimuli and on English concepts as responses. Prototype training was the most efficient; however, groups were not equated on task difficulty, and subjects did not learn the same responses in each group. This study compared prototype and rote instruction of English verbal responses to Chinese visual characters when experimental conditions were equated on difficulty level of stimuli and responses to be learned.

METHOD

Participants

Participants were 6 native English speakers, 3 male and 3 female, whose education ranged from 1 year of college to a master's degree. The participants were between 20 and 45 years old.

Materials

Stimulus materials were 60 Chinese characters and their English translations, with 30 in each condition. In the prototype condition, five high-frequency prototypes were selected. For each, six multiple-component Chinese characters that included the prototype were used. In the rote condition, 30 characters of similar difficulty that did not share distinctive features were selected. Characters and their English translations were printed on index cards using computer software. Another set of 60 cards with characters only was prepared in the same way.

Setting and Sessions

Participants were trained individually, 30 min per session, 5 to 7 days per week. During each session, six words from each condition were trained sequentially, with a 3-min break between conditions.
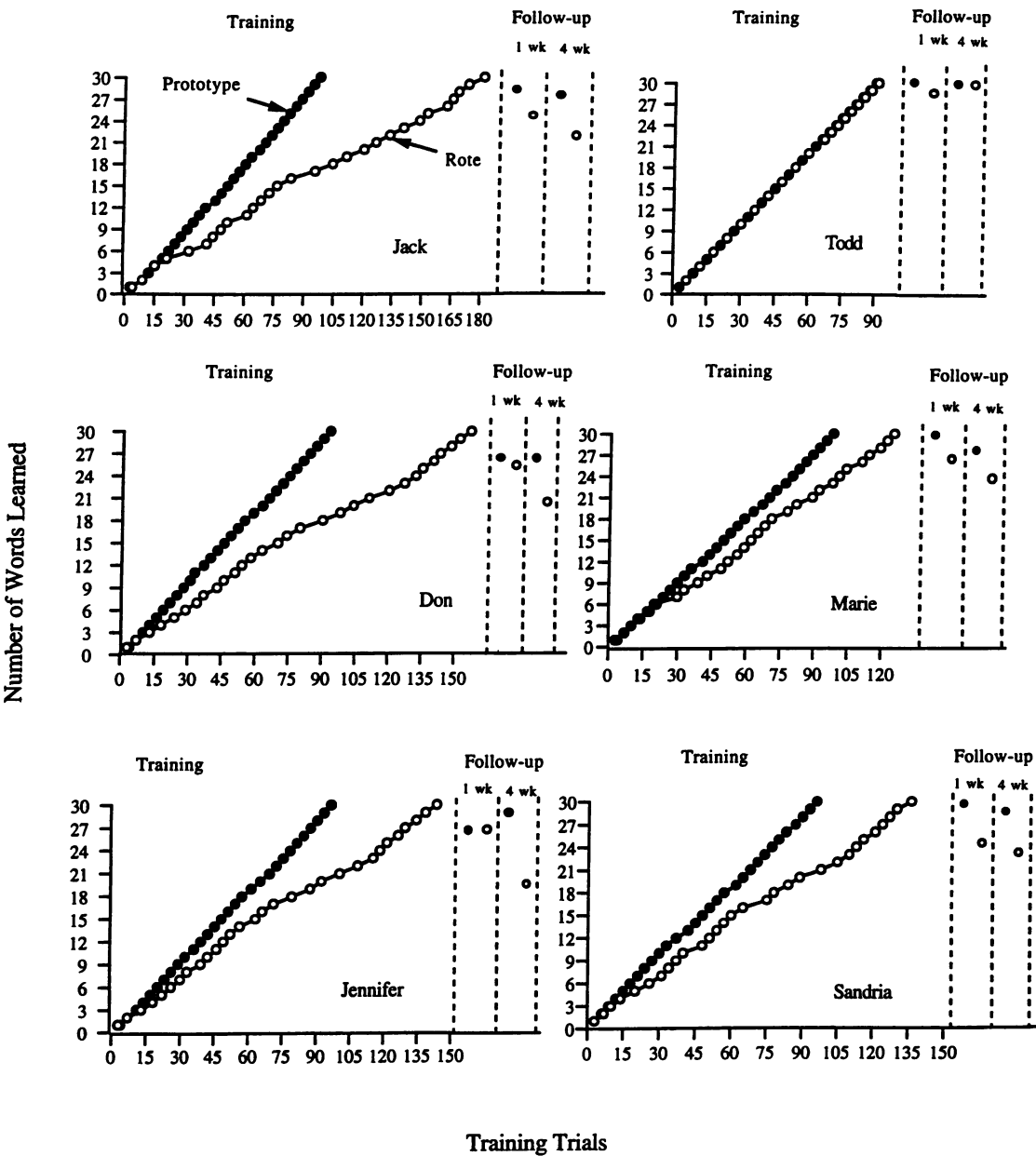
Figure 1.   Number of words learned across training trials in the prototype and rote experimental conditions.

General Procedures

Initially in each session, Chinese characters that had not met the acquisition criterion were presented individually without translations. Participants had 30 s to state English translations; correct responses were praised. Words translated correctly for three consecutive sessions met the acquisition criterion and were re-presented four sessions later for a maintenance check.

Words that did not meet the acquisition criterion were instructed in the prototype and rote conditions. Six words in each condition were taught during each session using

a multielement design. During 30-s training trials, a Chinese character and its English translation were presented, and participants responded. Each of the six words in a condition was presented alone when it was first introduced and then was presented simultaneously with other words that already had been presented. Each of the six characters in an experimental condition received a total of three training trials during this phase of the session. After the six words in one condition had been instructed, the six in the other condition were taught in the same fashion. At the end of each session, all 12 characters just trained, and any characters that had to be retrained, were tested. Follow-up tests occurred 1 and 4 weeks following training.

Prototype instruction. Verbal instruction, pointing prompts, and performance feedback were used to condition English verbal naming responses to Chinese character visual stimuli. For example, the Chinese character for *eat* has a distinctive prototype that means *mouth.* The experimenter pointed to the prototype and stated its meaning.

Rote instruction. Participants were instructed to trace the character with their finger and write its English translation twice.

Interscorer Agreement

A native Chinese speaker independently scored translating performance every fourth session. Agreement was 100%.

RESULTS AND DISCUSSION

Figure 1 shows that words in the prototype condition were learned more rapidly than those in rote instruction for 5 of the 6 participants. Todd learned most rapidly, with little difference between conditions. He reported that in the rote condition he used a verbal mediation strategy of establishing a relationship between the physical features of the stimuli and their semantic meaning. This strategy was as effective as the prototype. There was response maintenance in both conditions, with better performance in the prototype condition for 3 participants. Follow-up tests also showed superior performance in that condition.

The prototype may have facilitated learning because it was a distinctive feature or common visual stimulus in a set of multicomponent characters that evoked semantically related English verbal responses. Programming common stimuli is an effective method of promoting generalization (Stokes & Baer, 1977) and a recommended component of direct instruction (Engelmann & Carnine, 1982). Furthermore, the prototype helped to establish visual stimulus–stimulus equivalence among members of the same class of Chinese characters and stimulus–response equivalence between the visual stimulus class members and their semantically related English verbal naming responses. This research has implications, not only for teaching Chinese, but also for teaching a number of Japanese characters that are the same as those in Chinese.

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